AOARD REPORT

SPring-8 at Harima Science Garden, Hyogo

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AOARD

The SPring-8 project site was visited on 23 Jun. 93. The SPring-8 project is one of the major projects managed by the Science and Technology Agency of the Japanese Government for construction of a world-class high energy synchrotron radiation facility (8 Gev). It started in the beginning of the 1989 Japanese Fiscal Year (Apr. 89). Since the inception of the project, 35% of the total estimated budget of $1.1 billion has been spent. The facility is expected to begin initial operations before the end of 1997. The project is expected to be completed in 1999 with 61 beam lines available for experiments. Out of these, 10 beam lines are set aside for cooperative use. The remaining 51 beam lines are modified according to users for their needs, and users will pay for installation and maintenance. Once completed, this facility will serve more than 2,000 research scientists around the world and more than 30 research projects. Included in these projects are observations of the surface structure from electrochemical reactions and X-ray diffraction.

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To: Dr Shiro Fujishiro
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Date: 15 July 93

Subject: Trip Report - SPring-8 Site at Harima Science Garden City, Hyogo Prefecture, 23 June 93

ABSTRACT:
The SPring-8 project site was visited on 23 Jun 93. The SPring-8 project is one of the major projects managed by the Science and Technology Agency of the Japanese Government for construction of a world-class high energy synchrotron radiation facility (8 Gev). It started in the beginning of Japanese Fiscal Year 89(Apr 89). Since the inception of the project, 35% of the total estimated budget of $1.1 billion has been spent. The facility is expected to open with an initial operational capability before the end of 1997. The project is expected to be completed in 1999 with 61 beam lines available for experiments. Out of these, 10 beam lines are set aside for cooperative use. The remaining 51 beam lines are modified according to users for their needs, and users will pay for installation and maintenance. Once completed, this facility will serve more than 2,000 research scientists around the world and more than 30 research projects. Included in these projects are observations of the surface structure from electrochemical reactions and x-ray diffraction.

Purpose: Visit the SPring-8 Site.

Participants: Dr Victor Rehn of ONRAsia, Prof Chikawa of the Himegi Institute of Technology, and myself.

Comments and Observations:
- Dr Rehn and I met Prof Chikawa at the Sungarden hotel lobby where we were staying in Himeji at 9 o'clock in the morning. Prof Chikawa drove his car and gave us ride to the SPring-8 site, located in Harima Science Garden City. The city is located approximately 40 kilometers northwest of Himeji in western part of Himeji Prefecture.
- Prof Chikawa was director of the Institute of High Energy Physics at Tsukuba City until his retirement three years ago. Soon after his retirement, he move to the Himeji Prefecture sponsored university called the Himeji Institute of Technology and took up the professorship at the newly established Science Department. The campus for the Science Department was established less than 3 years ago inside the Harima Science Garden City, and now there are four brand new buildings completed in the campus. The campus overlooks the SPring-8 site. At the present time, Prof Chikawa is actively involved on the on-site SPring-8 project. He took us into one of the newly built school buildings and introduced Vic and I to Associate Professor Koshiro Toriumi who is carrying out research with Prof Chikawa.

- The construction of the SPring-8 facility is going according to the schedule. We saw one section of the completed storage ring building. Most of the magnets are placed inside the building. There are quadrupole, sextupole and bending magnets waiting to be tested for magnetic properties by measuring the magnetic field profiles. Testing is pretty much automated with the use of personal computers. The actual measurement will start by the end of this calendar year. However, in order to test all of them, which consists of 88 bending, 480 quadruples, and 336 sextupole magnets, it would think it take a long time to finish checking out all the them. We found out there are only two people assigned from RIKEN to coordinate checking procedures for all these magnets. Of course, the actual testing is done by contractors.

- I found out most of technical issues are discussed in the bi-annual newsletter published by Riken and JAERI groups. The name of the newsletter is called the "Spring-8 Newsletter". The last issue that came out in Feb 93 was the third issue. The first issues was published in Aug 90. For some reason the second issue came out in Aug 92 (I guess not much activities happened in the first year). See copies of second and third issues attached here.

- As far as the budget is concerned, since the beginning of the project, which started in the beginning of the 89 fiscal year, 35% of the total estimated budget of $1.1 billion dollars (based on 1 dollar=100 yen calculation) has been spent. The facility is expected to have the initial operational capability in 1997. The total project is expected for completion in 1999 with 61 beam lines available for experiments. Out of these, 10 beam lines are set aside for coorporative use. The remaining 51 beam lines are modified according to users for their needs, and users will pay for installation and maintenance.

Summary:

Construction of the facility is on schedule. Based on what Prof Chikawa said, the facility may pick up the pace due to the increased budget allocation by Minister of Finance next year. It is possible that the facility may operate ahead of schedule. Once completed, this facility serves more than 2,000 research scientists around the world to investigate more than 30 research projects. Included in these projects are observation of surface structure from electrochemical reactions and the surface structure determined by X-Ray diffraction.